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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,874	06/29/2001	Soon Sung Yoo	041501-5432	3407

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EXAMINER

KIELIN, ERIK J

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 05/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/894,874

Applicant(s)

YOO ET AL.

Examiner

Erik Kielin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of the invention of Group I, claims 1-9, 19 and 20 in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 10-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 16 in paragraph [0014]. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the upper and side surfaces of the gate and data pads are completely covered by the insulating film and the transparent conductive

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film” as required in claim 6, and “the insulating film is formed on side surfaces and upper parts of the gate and data pads” as required in claim 7, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Figs. 3 and 5 only show that the transparent conductive film 49 is covered only by the ACF 51 --not by the insulating film 45, 47 which is only on the side surfaces of the transparent conductive film 51.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:
- in paragraph [0004], last line, replace “plat” with --flat-- for correct spelling;
- in paragraph [0005], line 2, replace “silicone” with --silicon-- for correct spelling.
- Appropriate correction is required.

Claim Objections

7. Claims 1 and 2 are objected to because of the following informalities:
- in claim 1, last line, before “transparent” insert --the-- for clarity;
- in claim 2, line 1, replace “The LCD pads” with --The pad structure-- for consistency.
- Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 4, 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the transparent conductive layer" in line 1. There is insufficient antecedent basis for this limitation in the claim because independent claim 1 recited a plurality of transparent conductive layers --not a transparent conductive layer.

Claim 6 presently reads, "wherein the upper and side surfaces of the gate and data pads are completely covered by the insulating film and the transparent conductive film." It is unclear how they can both cover the transparent conductive film. As noted above, the Figs. 3 and 5 show that only the ACF 51 covers the transparent conductive film 49. The insulation film 45, 47 only covers the side surface --not the upper surfaces.

Claim 7, which depends from claim 6 reads, "wherein the insulating film is formed on side surfaces and upper parts of the gate and data pads." It is unclear how the insulating film is "completely covered" by the insulating film as required in claim 6 and at the same time, only cover "parts of the upper surface." This is contradictory. A film cannot cover the entire upper surface and simultaneously cover only parts of the upper surface.

The remaining claims are rejected for depending from the above rejected claim 6.

For the purposes of patentability, the claims will be interpreted in light of the showing in the figures.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-5, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,636,329 (**Sukegawa et al.**).

Sukegawa discloses a pad structure **100** (called “terminals” **100** in **Sukegawa**) for a liquid crystal display, comprising:

a substrate **1**;

a plurality of gate pads and data pads **2-1** formed on the substrate **1** (col. 4, first paragraph; Figs. 3A, 3B);

an insulating film **3, 9** formed on surfaces of the gate pads and data pads **2-1**;

a plurality of transparent conductive layers **8** electrically connected to the gate pads and the data pads **2-1**; and

an anisotropic conductive film **10** formed on the transparent conductive layers **8** to cover entire upper and side surfaces of transparent conductive layers (Figs. 3A-3E; col. 6, lines 9-38).

Regarding claim 2, the insulating film **3, 9** extends over side surfaces and upper surfaces of the gate pads and the data pads **2-1**.

Regarding claim 3, the insulating film **3, 9** contacts the substrate **1** at end portions of the gate pads and data pads **2-1** (Figs. 3A, 3E).

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Regarding claim 4, the transparent conductive layer **8** includes indium tin oxide (col. 5, lines 6-8).

Regarding claim 5, the insulating film **3, 9** is formed by laminating a gate insulating film **3** and a protective film **9**.

Regarding claim 19, **Sukegawa** discloses a pad structure for a liquid crystal display, comprising:

- a substrate **1**;

- at least one pad **2-1** formed on the substrate;

- an insulating film **3, 9** formed on the pad, the insulating film covering side surfaces of the pad **2-1** and a portion of the substrate **1** adjacent to the side surfaces of the pad (Fig. 3A; col. 6, lines 9-38); and

- at least one conductive layer **7-2, 8** connected to the pad through contact holes **6** defined through the insulating film.

Regarding claim 20, **Sukegawa** discloses a liquid crystal display formed on a substrate **1**, comprising:

- an active region defined at a first portion of the substrate (called "DISPLAY PORTION" IN Fig. 3e); and

- a pad contact area (called "terminal 100") defined on a second portion of the substrate adjacent to the active region (Fig. 3D), the pad contact area including:

- at least one pad **2-1** formed on the substrate **1**,

- an insulating film **3, 9** formed on the pad **2-1**,

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at least one conductive layer 7-2, 8 connected to the pad 2-1 through contact holes 6 defined through the insulating film 3, 9, wherein the insulating film 3, 9 covers side surfaces of the pad and a portion of the substrate adjacent to the side surfaces of the pad (Fig. 3A; col. 6, lines 9-38).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sukegawa et al.** in view of Applicant's admitted prior art (APA).

Regarding independent claim 6, **Sukegawa** discloses a pad structure for a liquid crystal display including a pad contact area and an anisotropic conductive film deposit area, the pad structure comprising:

a tape carrier package layer 31a, 31b (of tape carrier package 300) to receive a driving signal col. 5, lines 34-35; Fig. 3D);

an anisotropic conductive film 10 formed on a lower portion of the tape carrier package layer 31a, 31b and covering at least the pad contact area 2-1 of the liquid crystal display (Figs. 3D, 3E);

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an insulating film **3, 9** defining a plurality of contact holes **6** therethrough, the insulating film **3, 9** disposed on a lower portion of the anisotropic conductive film **8** in the pad contact area **2-1** of the liquid crystal display;

a plurality of gate and data pads **2-1**; and

a transparent conductive layer **8** electrically connecting the gate and data pads **2-1** to the anisotropic conductive film **10** through the contact holes **6**, wherein upper and side surfaces of the gate and data pads **2-1** are completely covered by the insulating film **3, 9** and the transparent conductive layer **8**.

Sukegawa, does not teach that the pad structure includes a grinding area.

APA teaches that it is known in the art for a pad structure to have a grinding area **II** (**APA** prior art Figs. 1 and 2; instant specification paragraphs [0010]-[0013]).

It would have been obvious for one of ordinary skill in the art, at the time of the invention to have a grinding area in the pad structure of **Sukegawa**, because **APA** teaches that this is conventional in the art.

Regarding claim 7, **Sukegawa** discloses that the insulating film **3, 9** is formed on side surfaces and upper parts of the gate and data pads **2-1**.

Regarding claim 8, **Sukegawa** discloses that the gate and data pads are formed on a substrate, and the insulating film contacts the substrate at end portions of the gate pads and data pads.

Regarding claim 9, **Sukegawa** does not teach that the gate insulating film is formed between the gate and data pads.

APA Fig. 2 shows that this is a standard configuration.

It would have been obvious for one of ordinary skill in the art, at the time of the invention to form an insulation film between the gate and data pads to prevent electrical short therebetween and because APA teaches that this is a conventional configuration.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,187,604 and JP 10-213818 A (each to **Taniguchi** et al.) teach covering the terminal portion of the aluminum wiring with ITO and a passivation layer to protect the aluminum metal from corrosion (Abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik Kielin whose telephone number is 703-306-5980. The examiner can normally be reached on 9:00 - 19:30 on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached at 703-308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Erik Kielin

April 29, 2003